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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/376,875	08/18/1999	GREGORY M. CHRYSLER	884.148US1	7059
21186	7590	11/15/2004	EXAMINER	
SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.			LEO, LEONARD R	
P.O. BOX 2938			ART UNIT	
MINNEAPOLIS, MN 55402			PAPER NUMBER	

3753

DATE MAILED: 11/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/376,875	Applicant(s) CHRYSLER ET AL.	
	Examiner Leonard R. Leo	Art Unit 3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-9 and 22-43 is/are pending in the application.
- 4a) Of the above claim(s) 1-3, 5-9, 25, 26 and 33-35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-24, 27-32 and 36-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

In response to the Appeal Brief filed on August 12, 2004, the finality of the Office action mailed on March 9, 2004 is withdrawn. Claims 1-3, 5-9 and 22-43 are pending, and claims 1-3, 5-9, 25-26, 33-35 remain withdrawn.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 22-24, 27-32, 36-43 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 22, 28 and 36, the recitation of an “aspect ratio” is not clearly defined. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 22-23 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wyler et al in view of Azar et al.

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Wyler et al (Figures 2 and 12) discloses all the claimed limitations except a specific aspect ratio of the fin height to fin thickness.

Azar et al discloses a heat sink comprising a folded fin in serpentine fashion having an aspect ratio of the fin height to fin thickness of about 18 to 200 (column 4, lines 3-45, $t/H = 0.005$ to 0.055) for the purpose of optimum heat exchange.

Since Wyler et al and Azar et al are both from the same field of endeavor and/or analogous art, the purpose disclosed by Azar et al would have been recognized in the pertinent art of Wyler et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Wyler et al an aspect ratio of the fin height to fin thickness of about 18 to 200 for the purpose of optimum heat exchange as recognized by Azar et al.

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wyler et al in view of Azar et al as applied to claims 22-23 and 27 above, and further in view of Yamamoto et al.

The combined teachings of Wyler et al and Azar et al lacks a diamond base.

Yamamoto et al discloses a heat sink comprising a plurality of fins 7 and a diamond base 8 for the purpose of improving heat exchange (column 2, lines 45-47).

Since Wyler et al and Yamamoto et al are both from the same field of endeavor and/or analogous art, the purpose disclosed by Yamamoto et al would have been recognized in the pertinent art of Wyler et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Wyler et al diamond base for the purpose of improving heat

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exchange as recognized by Yamamoto et al. Furthermore, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Claims 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Azar et al in view of Bishop et al.

Azar et al (column 4, lines 3-45, $\tau/H = 0.005$ to 0.055) discloses all the claimed limitations except a top fan.

Bishop et al discloses a heat sink comprising a top fan 5 and a front fan for the purpose of providing turbulent and impingement airflow to improve heat exchange.

Since Azar et al and Bishop et al are both from the same field of endeavor and/or analogous art, the purpose disclosed by Bishop et al would have been recognized in the pertinent art of Azar et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Azar et al a top fan for the purpose of providing turbulent and impingement air flow to improve heat exchange as recognized by Bishop et al. Although, the fans are remotely positioned from the heat sink, it would have been obvious to one of ordinary skill in the art to position the fans onto the heat sink to minimize pressure loss from the fan to the heat sink.

Regarding claim 30-31, Azar et al (column 4, lines 11-13) discloses brazing the fin to the base.

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Claims 32, 36-40 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wyler et al in view of Azar et al as applied to claims 22-23 and 27 above, and further in view of Bishop et al.

The combined teachings of Wyler et al and Azar et al lacks a front fan.

Bishop et al discloses a heat sink comprising a top fan 5 and a front fan for the purpose of minimizing air flow stagnation to improve heat exchange.

Since Azar et al and Bishop et al are both from the same field of endeavor and/or analogous art, the purpose disclosed by Bishop et al would have been recognized in the pertinent art of Azar et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Azar et a second front fan for the purpose of minimizing air flow stagnation to improve heat exchange as recognized by Bishop et al. Although, the fans are remotely positioned from the heat sink, it would have been obvious to one of ordinary skill in the art to position the fans onto the heat sink to minimize pressure loss from the fan to the heat sink.

Regarding claim 43, Wyler et al (column 9, lines 36-41) discloses a thermal grease between the fins 10 and base 138.

Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wyler et al in view of Azar et al and Bishop et al as applied to claims 36-40 and 43 above, and further in view of Yamamoto et al, as applied to claim 24 above.

Claims 42-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wyler et al in view of Azar et al and Bishop et al as applied to claims 36-40 and 43 above, and further in view of Bright et al.

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The combined teachings of Wyler et al, Azar et al and lacks a thermal gel.

Bright et al discloses a heat sink comprising heat sink 60; clamp 80 and thermal grease (column 2, lines 10-14) or thermal gel (column 3, lines 58-64) for the purpose of improving heat conduction.

Since Azar et al and Bright et al are both from the same field of endeavor and/or analogous art, the purpose disclosed by Bright et al would have been recognized in the pertinent art of Azar et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Azar et al a thermal grease or thermal gel for the purpose of improving heat conduction as recognized by Bright et al. Thus, thermal grease and thermal gel are obvious variants of one another. Furthermore, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Response to Arguments

The rejections in view of Jean, Morosas, Lee and Yeh are withdrawn.

No further comments are deemed necessary at this time.

Conclusion

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard R. Leo whose telephone number is 703-308-2611. The examiner can normally be reached on Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gene Mancene can be reached on 703-308-2696. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



Leonard R. Leo
Primary Examiner
Art Unit 3753

October 25, 2004



David A. Scherbel
Supervisory Patent Examiner
Group 3700